

BOOK OF ABSTRACTS



CONGRESS

OF THE SERBIAN GENETIC SOCIETY

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VRNJAČKA BANJA • SERBIA





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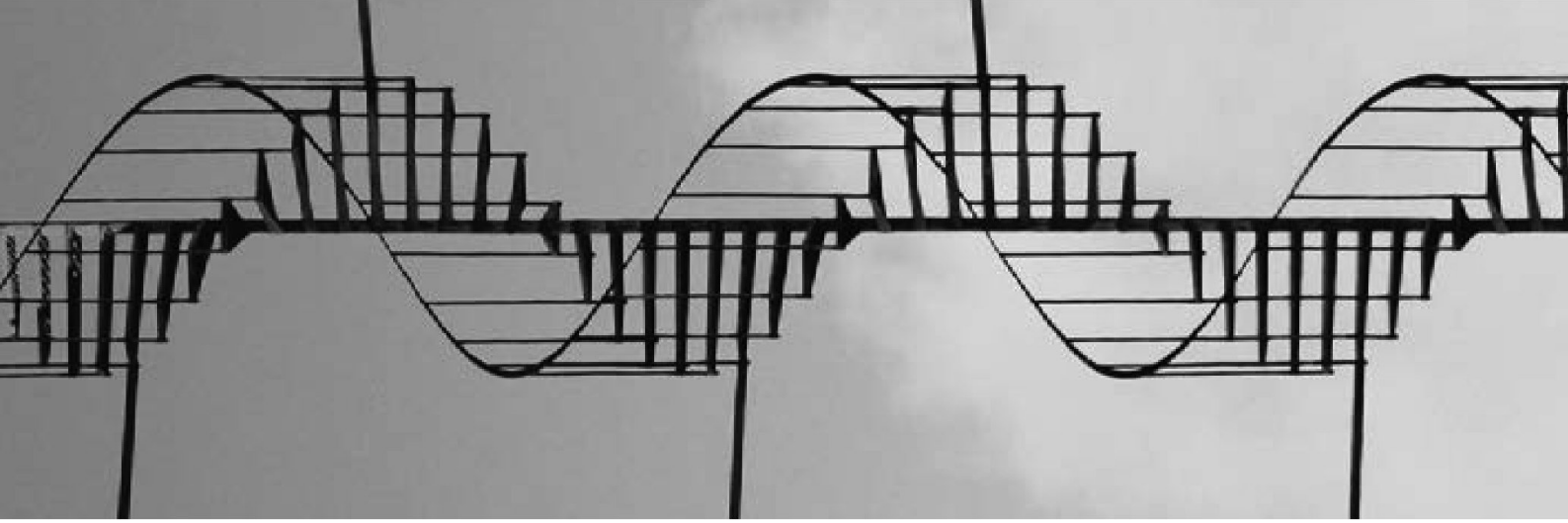
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WELCOME TO VI CONGRESS OF THE SERBIAN GENETIC SOCIETY!

Dear colleagues,

Welcome to the 6th Congress of the Serbian Genetic Society. The Serbian Genetic Society (SGS) has been founded in 1968 and the first Congress organized by the SGS was held in 1994 in Vrnjaka Banja. Since then, the Congress of Serbian Genetic Society is held every five years. Over the past years, the Congress has grown from a national to an international meeting.

The experience of the past meetings motivated our efforts to continue with this series with a clear tendency to strengthen the scientific connections among researchers from different European countries.

The Congress will focus on the most recent advances in genetics and on wide range of topics organized in 9 sessions and two workshops. Many of the presentations will be in lecture-like settings, but we hope that there will also be ample opportunities for informal interaction outside the scheduled sessions.

The successful organization of the Congress has required the talents, dedication and time of many members of the Scientific and Organizing committees and strong support from our sponsors. I hope that you will find the Congress both pleasant and valuable, and also enjoy the cultural and natural beauty of Vrnjaka Banja.

Yours sincerely,

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IDENTIFICATION OF eEF1A AND EF-Tu PROTEIN SYNTHESIS IN WHEAT AND OAT GENOTYPE UNDER HEAT CONDITION

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Expression elongation factors eEF1A and EF-Tu, in grain filling stage when the cereal most sensitive in the field conditions, can be an important determinant of heat tolerance. The aim of our work was to examine the expression and accumulation of EF-Tu and eEF1A in grain filling stage of five genotypes of winter wheat and one oat genotype in conditions of heat stress. In addition, the correlation between accumulation of elongation factors eEF1A and EF-Tu, and yield components of cereals in the field was investigated. Flag leaf samples of small grains were analyzed by immunoblotting. Samples were collected in conditions of moderate, control air temperature (23 °C; CT) and high temperature (38 °C; HS) in a field experiment. After the harvest, grain yield was determined. The yield components, the weight of dry seed and grains number per spike, were also assessed in the stage of full physiological maturity of investigated cultivars. Obtained results revealed a difference in the level of EF-Tu accumulation both under conditions of moderate air temperatures and conditions of heat stress among investigated cultivars. Cultivar Zvezdana was the only one that showed increase in EF-Tu accumulation under HS (25%) compared to CT. Immunoblot analysis indicated the increase of eEF1A accumulation in conditions of heat stress in cultivars Talas, Zvezdana, Pudarka and Carica. The highest increase of 43% in relation to control was detected in cultivar Talas. A significant, positive, linear correlation was found between the expression of eEF1A and cereals productivity under heat-stress conditions. Investigation of the molecular mechanisms aims to develop agronomic strategies to improve tolerance against heat stress.

ELONGATION FACTORS, HEAT STRESS, WHEAT, OAT

VARIABILITY OF STARCH CONTENT IN GENETICALLY DIVERGENT VARIETIES OF WHEAT

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The reliable indicator of wheat flour quality is content of starch of seed, together with content of protein, fat and dietary fiber. The aim of this work is analysis of starch content of wheat seed and identification of variety desirable for wheat breeding. Seeds of ten genetically divergent bread wheat varieties (Iliina, Obala, Futura, Renesansa, Ratarica, Vljajna, Milla, Apache, Salasar, Hyfi) were used for research. Starch content was determined using the spectrophotometric method according to Hansen and Moller (1975). In the investigated varieties, the content of starch ranged from 46.2% to 65%. The highest content of starch was found in variety Apache (65%) and the least starch content was in variety Vljajna (46.2%). Besides Apache variety, high starch content is found in varieties Futura, Milla and Hyfi. Varieties in which the lower starch content is determined are the varieties of wheat Vljajna, Obala and Iliina. The results showed differences among analyzed wheat varieties according to the content of starch and that the Apache variety can be used in crossbreeding for creating new wheat genotype with high starch content and improved nutritive quality.

STARCH, WHEAT, VARIETY, GENETIC DIVERGENCE